

DIASTASIC (THE) VALUE OF MALT EXTRACTS XX

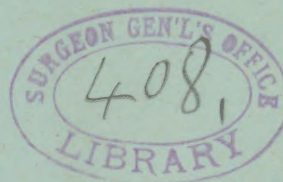
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THE
DIASTASIC VALUE
OF
MALT EXTRACTS,
WITH
REPORTS
OF
COMPARATIVE TESTS

BY

EMINENT PHYSICIANS, CHEMISTS AND
PHARMACISTS, AS

Professors C. F. CHANDLER, of New York; B. F. DAVEN-
PORT, of Boston; J. B. MARVIN, of Louisville; A. B.
PRESCOTT, of Ann Arbor; R. A. WITTHAUS, Buffalo;
E. T. FRISTOE, of Washington; R. FRESSENIUS, of Wies-
baden; T. REDWOOD, Ph. D., F. R. C. S., of London;
A. RIVERS WILSON, Ph. D., of London, etc.



Condensed Reports of Physicians, Chemists and Pharmacists on the Comparative Diastasic Power of Trommer's Extract of Malt and Maltine.

	Trommer's Extract of Malt.	Maltine.
Professor Albert B. Prescott, Ann Arbor.	Uniform converting power of 16 to 17.	Variable power of 10 to 11.
Dr. R. Fresenius Wiesbaden.	Great Diastasic power.	No Diastasic properties.
T. Redwood, Ph. D., F. R. C. S., London.	Retains the property of acting on starch.	
A. Rivers Wilson, Ph. D., London.	One of the best samples which have come under my notice.	
R. S. McCulloch, Ph. C., Ann Arbor,	Grams required to convert one gram starch, 0.8.	Grams required to convert one gram starch, 3.
Professor J. B. Marvin, Louisville.	Active Diastasic properties.	No evidence of the desired qualities.
Professor C. F. Chandler, New York.	Converted starch completely.	No Diastasic power.
Bartlett & Plummer, Pharmacists, New York.	Converts starch rapidly.	Seems to have no effect.
Wanier & Imgard, Pharmacists, New York.	Converts largest quantity of starch.	No effect on starch whatever.
W. H. DeVinny, Pharmacist, New York.	Converts twice its weight of starch.	Produces no perceptible change.
John H. Taylor, Pharmacist, New York.	Converted starch instantly.	No more effect than so much molasses.
Max. L. Walters, Ph. G., Pharmacist, N. Y.	Diastasic action very rapid.	Wanting altogether.
Edwin F. Hahn, Ph. G., Pharmacist, N. Y.	Converted starch readily.	No converting power whatever.
H. A. Withoff, Pharmacist, Brooklyn.	Changed starch almost instantly.	Not the slightest effect upon starch.
E. C. Reiss, Ph. G., Pharmacist, Brooklyn.	Converts twice its weight of starch.	Converts none.
Joseph G. Underhill, Pharmacist, Brooklyn.	Converts twice its weight of starch.	Appears to have no effect.
Henry H. Dickinson, Pharmacist, Brooklyn.	Rich in starch digestive principles.	
Charles G. Curtis, Pharmacist, Brooklyn.	Rapidly converts starch.	Little if any effect on starch.
Professor E. S. Wood, Boston.	Converted starch paste.	Affected comparatively little.
Professor B. F. Davenport, Boston.	Converts starch completely.	No special Diastasic action at all.
Wm. M. Bartlet, Ph. G., Pharmacist, Boston.	Gave no reaction for starch.	Gave decided reaction for starch.
J. F. Hancock, Pharmacist, Baltimore.	Excellent article.	Very inferior article.
Professor R. Dorsey Coale, Ph.D., Baltimore.	Formed 1.740 grammes Maltose.	No appreciable effect.
Charles G. Meyer, Pharmacist, Baltimore.	Converted starch rapidly.	No effect on starch.
Professor J. E. Clark, Detroit.	Complete conversion of starch.	Almost inert.
Wm. Dupont, Pharmacist, Detroit.	Converts large quantities.	No appreciable effect.
James W. Caldwell, Pharmacist, Detroit.	Converted starch.	Does not.
A. Bassett & Co., Pharmacists, Detroit.	Converted 4 ounces starch paste in 4 minutes.	Had no effect.
McFarland Bros., Pharmacists, Detroit.	Converted 4 ounces starch paste.	Had no effect.
H. A. Frank, Pharmacist, Detroit.	Does convert starch.	Does not convert starch.
A. W. Allen, Pharmacist, Detroit.	Converts rapidly large quantities of starch.	No perceptible effect.
F. W. R. Perry, Ph. G., Pharmacist, Detroit.	Converted starch rapidly.	Had no perceptible effect.
A. A. DeNoon, Pharmacist, Buffalo.	Converts starch rapidly.	Had not the slightest effect.
P. Fitch, M. D., Pharmacist, Philadelphia.	Converted starch completely.	Did not even liquify starch.
Professor E. T. Fristoe, Washington.	Starch all converted.	No apparent change produced.
H. A. Johnston & Co., Pharmacists, Washington.	Converts starch rapidly.	No perceptible effect.
T. H. Patterson, M. D., Chicago.	Converts starch rapidly.	No effect whatever.
M. A. Coleman, Ph. C., Pharmacist, Chicago.	Converted starch rapidly.	Did not convert any starch.
Clapp & Gregory, Pharmacists, Chicago.	Converts starch very rapidly.	Apparently no effect.
J. J. Harrington, Pharmacist, Chicago.	Contains active Diastase.	No effect on starch.
C. E. Potts & Co., Pharmacists, Cincinnati.	Converted 4 ounces starch paste.	No perceptible effect.
Chas. A. Doerr, Ph.G., Pharmacist, Cincinnati.	Completely converted the starch.	Seemed to have no effect.
J. C. Otis & Co., Pharmacists, Cincinnati.	Entire conversion of starch.	No perceptible change.
J. H. Linnemann, Ph.G., Pharmacist, Cincinnati.	Converted starch instantly.	No apparent effect.
Emil Bixel, Pharmacist, Cleveland.	Converts starch rapidly.	Appears to have no effect.
H. W. Stecher, Ph. C., Pharmacist, Cleveland.	Converts all of the starch.	Without any appreciable effect.
Vincent, Davis & Co., Pharmacists, Louisville.	Converts the starch.	Starch did not seem to be affected.
S. P. Walker, Pharmacist, Louisville.	Starch completely converted.	No effect.
C. Klipstein, Pharmacist, St. Louis.	Converted the starch completely.	No effect.
C. E. Holzclaw & Co., Pharmacists, St. Louis.	Converts the entire amount of starch.	No perceptible effect.
Haskin & Smith, Pharmacists, Rochester.	Converts starch.	Has no perceptible effect.
Czar Dunning, Pharmacist, Rochester.	Converts starch rapidly.	Does not affect it.
E. S. Dawson, Jr., Pharmacist, Syracuse.	No indication of starch.	Not even thinned.
Smith & Dalton, Pharmacists, Syracuse.	Converted the starch immediately.	Had no effect.
W. H. H. Nash, M. D. Pharmacist, Columbus.	Gave no starch reaction.	Marked starch reaction.
Howarth & Ballard, Pharmacists, Utica, N.Y.	Converts starch.	Very little effect.
E. O. Gates, Pharmacist, Springfield, Mass.	Completely converts starch.	No material change.
E. W. Stoddard, Pharmacist, Troy, N. Y.	Converted starch rapidly.	No perceptible effect.
E. R. Wilson, Pharmacist, Grand Rapids, Mich.	Converts starch rapidly.	Produces no change.
Keeler & Hogeboom, Pharmacists, Saginaw, "	Converted starch rapidly.	No perceptible effect.
H. G. Hamilton, Pharmacist, E. Saginaw, Mich.	Converts starch rapidly.	No perceptible effect.
Jas. W. Field, Pharmacist, Marysville, O.	Digests thick starch paste perfectly.	Does not digest starch.
Rolebaugh & Lisle, Pharmacists, Marysville, O.	Completely digests starch.	Has no influence on it.
E. Nichols, Pharmacist, Newark, O.	Starch easily converted.	Produces no appreciable change.
A. T. Speer, M. D., Pharmacist, Newark, O.	Rapidly digests starch.	No appreciable effect.
Boerstler & Goss, Pharmacists, Lancaster, O.	Completely digests starch.	Failed to do so.

THE DIASTASIC VALUE OF MALT EXTRACTS.

REPORTS OF COMPARATIVE TESTS BY CHEMISTS, PHARMACISTS AND PHYSICIANS.

TO PHYSICIANS AND PHARMACISTS:

We beg the indulgence of our patrons in submitting, at this time, the following reports, relating chiefly to the diastasic value of Malt Extract, and of preparations classed as such.

They present the results of experiments conducted by more than one hundred Chemists, Pharmacists and Physicians. *In every instance the samples employed were obtained in the open market, and the tests made under circumstances rendering any species of collusion impossible. The reports contained in the following pages emanate from localities so varied and widely separated as to furnish striking evidence respecting the quality of the preparations in question as they are found in stock and on the shelves of dealers in every part of the country.*

We have decided to publish these testimonials because both those desiring pure and reliable medicinal agents and ourselves as responsible manufacturers, are liable to suffer by permitting misleading statements to remain unchallenged.

As a guaranty that the experimental work has been honestly and skillfully done, we refer with confidence

to the names affixed to the reports here given, the originals of which, together with more than three hundred others of like character and import, are in our possession and open to inspection.

It is especially gratifying to be able to mention that the results obtained by chemists so eminent as Professors C. F. CHANDLER, of New York, E. S. WOOD and B. F. DAVENPORT, of Boston, fully coincide with those of so many others. It will be observed that the labors of Prof. J. B. MARVIN, of Louisville, were conducted under the auspices of the State Board of Health of Kentucky, and included an examination of nearly every preparation of this class in the market, and that he found the Malt Extract of our manufacture superior to all others. The reports, as a whole, so nearly correspond with the analysis of our Extract, made some years ago, by FRESSENIUS, REDWOOD, and RIVERS WILSON, that we include the latter for purposes of comparison.

The manufacturers of a preparation purporting to be prepared from barley, wheat and oats*, and which they allege to be far superior to any pure extract of

*Barley has been preferred for the purpose of malting from time immemorial. Its adaptation to this use depends partly upon the structure of the grain, which is such that its husk affords protection to the sprout or acrospire during germination, thus preventing its becoming blighted. Barley also contains a larger proportion than any other cereal of soluble albuminoids and of soluble phosphates; both these substances, according to LIEBIG and VON BIBRA, preserving a constant relation.

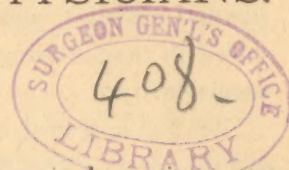
The proper medicinal value of malt extracts must be held to depend on the AMOUNT OF DIASTASE which they contain. * * * In malted barley we have at command an unlimited supply of diastasic power.—WM. ROBERTS, M. D., F. R. S.; *Prof. Clinical Medicine, Owens College.*

Other grains, such as wheat, oats, rye, and even Indian corn, may be malted, but experience has shown that barley is the grain best adapted to this process. IT YIELDS THE LARGEST QUANTITY OF DIASTASE.—*Miller's Elements of Chemistry, Part III; p. 123.*

Any of the cereals may be employed in the preparation of malt, but BARLEY IS PREFERRED for this purpose because experience has demonstrated that it YIELDS THE GREATEST PERCENTAGE OF DIASTASE.—*Muspratt, Theoretical, Practical and Analytical Chemistry; Art. Alcohol. Vol. 1; page 140.*

In the manufacture of malt, those grains only are used in which, during germination, diastase is developed, and among these barley takes the first rank.—BERSCH: *Chemie für Praktiker. Part ii; p. 12.*

The starch percentage of wheat varies, according to different statements, from 42 to 66 per cent., and the protein substances also vary from 12 to 30 per cent. In barley these variations are much smaller. Its average starch percentage is stated to be 60 per cent., and protein substances 15 per cent.—*Muspratt. Vol. 1; page 78.*



barley malt, have called in question the fairness as well as the scientific correctness of the tests applied by our representatives in carrying out our instructions to illustrate the fact that many of the malt preparations in the market are deficient and possess little or no diastatic value. To avoid controversy we decided to leave the settlement of the question thus raised, to wholly disinterested persons, whose skill is known and integrity unquestioned, and we believe that the result, as shown in the following pages, is unanswerable and unassailable.

We invite special attention to the communication of Prof. A. B. PRESCOTT, of the University of Michigan, reproduced from the AMERICAN JOURNAL OF PHARMACY, of March, 1885, which most pointedly illustrates the difference in the results when samples subjected to analysis are procured from disinterested sources, and when they happen to be supplied by some special agency. The striking discrepancies noted by Prof. PRESCOTT are similar to those observed under like altered circumstances by Professors WITTHAUS, of Buffalo, MORLEY, of Cleveland, DORSEY COALE, of Baltimore, and FRISTOE, of Washington. When it is remembered that all these gentlemen concur in stating that their investigations establish the fact that Trommer's Extract of Malt, AS OBTAINED FROM DEALERS, is of uniformly good quality, while certain other preparations procured from the same sources are uniformly inferior, in comparison, as digestive agents, it appears superfluous to say more. It is at least sufficiently plain that the use recently made of the names of those gentlemen has been misleading.

We were, in this country, the first to engage in the manufacture of Malt Extract for medicinal purposes, and the first anywhere to undertake the produc-

tion of the extract in a form and by processes whereby the amylolytic or digestive properties of barley malt are preserved and rendered available in therapeutics. The manufacture of malt extract has occupied our exclusive attention for more than ten years past, and we are deeply gratified to state that abundant reason exists indicating that our efforts to supply a pure preparation, possessing with remarkable uniformity the properties claimed for it, have been duly appreciated. The malt extract of our manufacture contains the soluble constituents of freshly malted barley of the best quality. One of the most important of these constituents is active *diastase*, and we use the utmost care that this substance shall suffer no injury during the process of manufacture. *We claim only that our malt extract contains so much diastase as exists in the malted barley from which it is derived. This is amply sufficient, and the ordinary daily dose of the extract contains more than enough diastase to convert into saccharine bodies all the amylaceous constituents of food ordinarily consumed in a day.* It would indeed be practicable to prepare a given sample of malt extract far richer in this ferment by adding to it diastase obtained from malt not otherwise used. In this manner specimens for special purposes might be prepared capable of promptly converting many hundreds or even many thousands of times their weight of starch. We have not had occasion to prepare an extract so reënforced. By assay of the malted grain and of the extract, and by other necessary expedients, skill in the employment of which has been acquired by long experience, we are enabled to secure great uniformity and a high standard of excellence in our product.

Respectfully,

THE TROMMER EXTRACT OF MALT COMPANY.

JOHN B. RICE, M. D., President.
ROBERT H. RICE, M. D., Vice President.
GUSTAVUS A. GESSNER, M. D., Secretary.
LEONIDAS H. CRESS, Treasurer.

THE DIASTATIC POWER OF CERTAIN EXTRACTS OF MALT.

BY ALBERT B. PRESCOTT.

In determining the starch-converting power of certain samples of Extract of Malt of the market, these samples having been obtained since December 1884, from different retail drug stores in different towns in the interior of Michigan, with one sample of each brand obtained in Chicago, Illinois, I have obtained the following given results:

"MALTINE" OF THE MALTINE MANUFACTURING COMPANY.	TROMMER'S EXTRACT OF MALT.
No. 1 converts 9 to 10 parts starch.	No. 1 converts 18 parts starch.
" 2 " 8 " "	" 2 " 16 " "
" 3 " 9 to 10 " "	" 3 " 17 " "
" 4 " 8 " "	" 4 " 16 " "
" 5 " 14 " "	Average, 16 2/3 " "
" 6 " 8 " "	
" 7 " 13 " "	
Average 1) to 11 parts starch.	

The starch was weighed as dry starch, and rated in parts to one part of the malt extract. The concentration, one part of starch to twenty parts of water, and one part of malt extract diluted with water to four parts. The time of digestion, twenty minutes; the temperature 60° to 64° C. The end-reaction, an extinction of the iodine and starch color in three minutes after the intermixture of the iodine with the digested starch (previously cooled).

One year ago, using the same method and conditions, I tested the starch-converting power of samples of "Maltine" and "Trommer's Extract of Malt," obtained in (open market) in Ann Arbor only, and then found and reported that the "Maltine" converted 33 parts of starch, and the "Trommer's Extract of Malt" converted 16 parts of starch. And testing now again my retained samples obtained a year ago, I find their converting power not changed, and my test results the same reported in January 1884.

From the investigation now made, I am convinced that, as now furnished in Michigan, "Trommer's Extract of Malt," holds a nearly uniform power of converting 16 to 17 parts of starch, and that "Maltine" has a more variable power of converting a mean of 10 to 11 parts of starch. And I am convinced that the samples of "Maltine" I obtained in Ann Arbor, a year ago, were exceptional samples, as they had three times the starch-converting power possessed by the average "Maltine" of the Maltine Manufacturing Company supplied in Michigan for the past three months.

ANN ARBOR, MICH., January 6, 1885.

Samples of Trommer's Extract of Malt and of Maltine, obtained from the stock of Messrs. McKesson & Robbins, New York, were submitted for analysis to the distinguished chemist and author, Prof. R. Fresenius, of Wiesbaden, Germany, in 1883. We submit the following extracts from his elaborate report, which is too voluminous to be fully inserted here:

CHEMISCHES LABORATORIUM

DES

GEN. HOFMANN'S PROFESSOR

DR. R. FRESENIUS,

WEISBADEN, Oct. 19, 1883.

I cannot omit calling attention to the extraordinary keeping quality of the Trommer Extract of Malt, which bore transportation from America to Wiesbaden during the heat of summer, and was kept here for some months without the least injury to its properties.

In consideration of its great Diastatic Power, its stability, together with its agreeable taste and odor, I can pronounce the Malt Extract of the Trommer Extract of Malt Company a superior preparation.

Maltine possesses no diastatic properties.

(Signed)

DR. R. FRESENIUS.

DR. REDWOOD'S ANALYTICAL DEPARTMENT,
17 BLOOMSBURY SQUARE.

I have examined the Extract of Malt, manufactured by the Trommer Extract of Malt Company, and judging from its physical characters and chemical reactions, I am of the opinion that it fairly represents what its name indicates, that is, that it is a preparation of malt in which are contained the essential properties of that substance, with a slight addition of aromatic bitter of the hop. It has the character of a soft extract, in the sense in which that term is used pharmaceutically, and it has evidently been prepared with great care and judgment, as it retains the property of acting on amylaceous bodies as Diastase does, while the Extract itself bears long keeping without change.

It also possesses the property of forming with Cod Liver Oil a permanent Mixture or Emulsion, in which the taste of the oil is very effectually covered, and its administration thus greatly facilitated.

T. REDWOOD, Ph. D., F. R. C. S. &c.,

Prof. Chemistry and Pharmacy to Pharmaceutical Society of Great Britain.
London, Sept. 18, 1872.

"The seventieth birthday of Prof. Fresenius was celebrated by great festivities by the students and natives of Wiesbaden. Over 300 telegrams and letters of congratulations were received from all parts of the world."—The Western Druggist, for June, 1889.

LONDON, ENG., Oct. 20th, 1870.

I have thoroughly examined this Extract of Malt, with the following results:

Malt Sugar	46.65
Dextrine, Bitter Extractives and Fatty Substances	22.5
Albuminoids	2.5
Phosphates	1.713
Sulphates and Chlorides of Potash and Soda, &c.	.51
Water	26.1

—99.973

This Extract of Malt is one of the best samples which have come under my notice. The various combinations of the Extract are all that they are represented to be, and in my opinion, cannot fail to prove valuable additions to the physician's armamentarium.

A. RIVERS WILSON, Ph. D.,

Analyst to the Grosvenor Co-operative Stores, Author of "Text Book of Chemical Analysis," "Chemical Notes for Pharmaceutical Students," &c.

R. S. McCULLOCH, Ph. C., in the chemical laboratory of the University of Michigan, and under the supervision of Prof. Prescott, during the year 1880 made an elaborate series of experiments for the determination of the constituents and comparative diastatic strength of the following Malt preparations, procured from retail dealers. The following extracts are taken from his report:

"Trommer's Extract of Malt, 100 parts, contained:

Water	22.84
Maltose	46.53
Dextrine	11.49
Ash	1.67

Number of grams of Extract required to convert one gram of starch, 0.8 gram.

"Reed & Carnrick's "Maltine" 100 parts contained:

Water	39.64
Maltose	30.49
Dextrine	4.67
Ash	1.34

Number of grams of "Maltine" required to convert one gram of starch, 3 grams.

"Tilden & Co.'s Extract of Malt, 100 parts contained:

Water	16.2
Maltose	38.47
Dextrine	10.87
Ash	1.68

Number of grams of Extract required to convert one gram of starch 23 grams."

The following, from a review of The Fifth Annual Report of the State Board of Health of Kentucky for 1883, is taken from the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, of December 8 of the same year:

Dr. Holland, as a special committee on the "Adulteration of Food and Medicines," being unversed in practical chemical analysis, secured the aid of Dr. J. B. Marvin, of Louisville, a skilled practical chemist and microscopist, to examine and report upon the comparative value of the several malt preparations offered the profession. Prof. Marvin is well known as a pains taking and trustworthy investigator in every detail of chemical analysis and hence the value of his report upon this important class of constructive medicines. The preparations of malt, both plain and in combination with other medicinal agents, have, in consequence of their digestive and constructive properties, deservedly won a high place among therapeutic agents. It is well known that the digestive agent in these preparations is diastase, the principle which converts starch into glucose, and hence the merits of any given malt extract depend upon the activity of these diastatic properties. Prof. Marvin obtained from a well known wholesale house bottles of each of the following brands: Trommer's, Maltine, Keasby & Mattison's John Hoff's (imported), John Hoff's (Tarrant's), Liebig's, and Shaker's Aromatic Elixir. AFTER APPLYING THE TEST MOST CAREFULLY UNDER IDENTICAL CONDITIONS, HE PLACES THE TROMMER EXTRACT AT THE HEAD OF THE LIST, HAVING FOUND IT TO POSSESS MOST ACTIVE DIASTATIC PROPERTIES. Keasby & Mattison's preparation, he says, behaved in a similar manner, and these two preparations alone were found to possess the power of digesting starch. Maltine failed to respond to the test, and at the end of several hours gave no evidence of the desired qualities. The other preparation's, also—Hoff's, Liebig's, Horlick Dry Malt Extract, and Shaker's—utterly failed to digest starch. Prof. Marvin concludes by stating that "to prescribe malt extract at its present price, and obtain a sample which contains no diastase, is to pay very dearly for malt sugar and extractives from barley."

I am convinced the samples of Maltine I obtained were exceptional as they possessed three times the starch-converting power of average Maltine.—Prof. Prescott.

Maltine failed to respond to test at the end of several hours.—Prof. Marvin

NEW YORK CITY.

From Prof. C. F. Chandler, Ph. D.; Hermon Atwood; Max L. Walters, Ph. G.; Edwin F. Hahn, Ph. G.; Bartlett & Plummer; Wanier & Imgard; W. H. De Vinny; John H. Taylor.

NEW YORK, Aug. 14, 1884.

TROMMER EXTRACT OF MALT COMPANY:
Gentlemen:

In compliance with your request I sent to Prof. F. Chandler, College of Physicians and Surgeons, New York, in sealed bottles, designated as "No. 1" and "No. 2," two ounces of Reed & Carnrick's "Maltine" and two ounces of Trommer's Extract of Malt, taken from my stock, with the request that he make a thorough test to indicate their diastatic power. Vial marked as "No. 1" contained Reed & Carnrick's Maltine; vial marked "No. 2" contained Trommer's Extract of Malt.

The results of the test, Prof. Chandler's certificate of analysis, is herewith inclosed.

Very respectfully yours,

HERMON W. ATWOOD,

Pharmacy of Herman W. Atwood, 846 Broadway, branch at East End, Long Branch, N. J.

CERTIFICATE OF ANALYSIS.

NEW YORK, Aug. 15, 1884.

Sir:

The following are the results of my analysis of the samples of Malt Extract, marked "No. 1" and "No. 2," tested for their effective diastatic power.

No. 1. Ten parts No. 1, with two parts starch, kept at a temperature of 100° F., did not undergo the slightest change, even after 65 minutes. Its diastatic power is, therefore, nothing.

No. 2. One part No. 2 with ten parts starch, kept at 100° F., converted the starch completely into soluble starch after five minutes.

One part No. 2 with two parts starch at 100° F., converted the starch into sugar in from ten to eleven minutes.

(EQUAL PARTS). One part No. 2 with one part starch at 100° F., converted the starch into sugar in from nine to ten minutes. No. 2 is, therefore, of good quality.

Respectfully, your obedient servant,

C. F. CHANDLER, Ph. D.

To Mr. H. W. Atwood, 846 Broadway, New York City.

NEW YORK, Aug. 13, 1884.

We have made a comparative test of the diastatic power of Trommer's Extract of Malt, and Reed & Carnrick's Maltine. Trommer's Extract of Malt converts starch rapidly, whereas Maltine seems to have no effect on the starch. The tests were made at the same temperature and under the same conditions.

Both preparations were taken from our stock.

BARTLETT & PLUMMER,
405 Fifth Avenue, and 1282 Broadway.

536 and 866 Sixth Avenue, New York, Aug. 12, 1884.

We have made comparative tests of the following Malt preparations: Trommer's, Hoff's, Maltine, Link's and Loefflund's, and find that Trommer's Extract of Malt converts by far the largest quantity of starch. Maltine, Hoff's Malt, Exr., and Link's Malt Extract, had no effect on starch whatever, showing absence of active diastase.

Preparations tested were taken out of our stock on hand.

WANIER & IMGARD.

NEW YORK, Sept. 15, 1884.

I have made comparative tests of Trommer's Extract of Malt and Reed & Carnrick's Maltine, and find that one part of Trommer's Extract quickly converts twice its weight of starch into sugar and dextrine, while Maltine, in the same proportion and under like circumstances, produces no perceptible change, proving conclusively that Trommer's Extract of Malt contains a large proportion of diastase, and is one which I can cheerfully recommend to the medical profession.

W. H. DE VINNY,
153 Christopher street.

NEW YORK, Aug. 14, 1884.

We have this day made tests of Trommer's Extract of Malt and Reed & Carnrick's Maltine, taken from stock. The former added to thick starch paste liquefied it instantly, while the latter produced no more effect on it than so much molasses.

The solution formed by the action of Trommer's Extract of Malt on starch, when tested with iodine, gave no blue color, while that to which the Maltine was added produced a dense blue precipitate.

JOHN H. TAYLOR,
Pharmacist, Broadway, cor. 41st street.

NEW YORK, Aug. 10, 1884.

I have tested the comparative merits of "Maltine" and the Trommer extract of Malt, and found that the diastatic action of the former on starch was wanting altogether, whereas that of the Trommer Extract was very

rapid. My method was as follows in both cases: I weighed out 3 grammes of corn starch and made quite a thick starch paste, by boiling it in 100 grammes of water. Then, after cooling to 105° F., and keeping it at a temperature of from 100° to 105° F., in a waterbath, I stirred into the mass thoroughly 4 grammes of Maltine. At the expiration of fifteen minutes there was no perceptible change in the consistency of the paste. I then added two drops of the paste to 60 grammes of water, to which I had previously added two drops comp. tinct. of iodine, and the immediate blue coloration indicated the presence of unconverted starch.

On making starch paste in the same manner as above, and adding the same quantity of Trommer's Extract (4 grammes), the paste was immediately liquefied, (becoming almost of the consistency of water), and at the expiration of six minutes, on adding two drops of the paste to the iodine solution, there was only the slight violet color reaction of dextrine apparent, proving that all the starch had been converted into dextrine and sugar.

I obtained both samples from a wholesale house here in New York.

MAX L. WALTERS, Ph. G.,
Pharmaceutical Chemist, 390 Ninth Avenue.

NEW YORK, Aug. 15, 1884.

Having frequently been questioned by physicians as to the comparative value of Trommer's Extract of Malt and Reed & Carnrick's Maltine, I decided to make a comparative test of the respective preparations. I found that Trommer's converted starch readily, while Maltine seemed to have no converting power on starch at all.

EDWIN F. HAHN, Ph. G.

BROOKLYN, N. Y.

From H. A. Withoff; Ed. C. Reiss, Ph. G.; Joseph G. Underhill;
Henry H. Dickinson; Charles G. Curtis.

BROOKLYN, E. D., Aug. 15, 1884.

I have made a comparative test of Trommer's Extract of Malt and Reed & Carnrick's Maltine, to determine their diastatic value. I found that one part of Trommer's Extract of Malt mixed with two parts of starch changed the starch into dextrine and sugar almost instantly, while Maltine did not seem to have the slightest effect upon the starch, even after allowing the mixture to stand for some time.

Both tests were made at the same temperature, and the Trommer's Extract of Malt and Maltine used were taken directly from my stock. This test I consider conclusive, and it leaves no doubt in my mind as to the great superiority of Trommer's Extract of Malt over Maltine as a powerful digestive agent.

H. A. WITHOFF,
Druggist, 997 Broadway.

BROOKLYN, E. D., Aug. 15, 1884.

Upon a comparative test of Trommer's Extract of Malt and Reed & Carnrick's Maltine, I find that Trommer's Extract of Malt converts twice its weight of starch into dextrine and sugar, and Maltine none under the same circumstances.

EDWARD C. REISS, Ph. G.

BROOKLYN, Aug. 15, 1884.

Trommer's Extract of Malt converts twice its weight of starch in a short time, while Maltine, under same conditions, appears to have no effect

JOSEPH G. UNDERHILL,
Pharmacist, 397 Classon Avenue.

84 MONTAGUE ST., BROOKLYN HEIGHTS, Aug. 14, 1884.

We have made a comparative test as to the converting power of several preparations of Malt Extract, including Reed & Carnrick's Maltine and Trommer's Extract of Malt, and find the latter richer in the starch digestive principle, diastase, than any that we have yet tested.

HENRY H. DICKINSON, Pharmacist.

BROOKLYN, N. Y., Aug. 15, 1884.

From careful tests I am of the opinion that Trommer's Extract of Malt is far superior to Maltine. Trommer's Malt rapidly converts starch into sugar, while Maltine seems to have little, if any, effect on starch.

CHARLES G. CURTIS,
833 DeKalb Avenue.

BOSTON.

From Prof. Ed. S. Wood; Prof. B. F. Davenport; Wm. W. Bartlett, Ph. G.; J. A. Fuller, M. D.; H. D. Huggan & Co.; Otto Von der Hyde.

Two samples of Trommer's Extract of Malt "Ferrated" and two of the Maltine Manufacturing Company's Maltine "Ferrated," taken from the stock of Messrs. Theodore Metcalf & Co., Pharmaceutical Chemists, Boston, and marked respectively Trommer's Extract A and "Maltine" B, were by them submitted for analysis to Prof. E. S. Wood, of Harvard, and Prof. B. F. Davenport, of the Massachusetts College of Pharmacy, who make the following reports:

HARVARD MEDICAL COLLEGE, CHEMICAL LABORATORY,
BOSTON, NOV. 10, 1884.

THEODORE METCALF & Co..

Gentlemen:

I am directed by Dr. Wood to inform you that sample A, of the two Extracts of Malt, is by far the better. Five grammes of A converted an amount of starch paste that fifty of B affected comparatively little.

C HARRINGTON, for
DR. EDWARD S WOOD

MASS. COLLEGE OF PHARMACY, CHEMICAL LABORATORY,
BOSTON, Aug 28, 1884

THEODORE METCALF & Co.:

Dear Sirs:

I have examined the two samples of Malt Extract which you sent me on the 19th, marked A and B. My method of examination was as follows: To add together equal volumes of one per cent. solutions of the Malt Extract and of a one per cent. solution of boiled starch; and having prepared some thirty one ounce bottles filled with water, to which a drop of solution containing one per cent. of iodine and two per cent. of iodide of potassium had been added, to drop into this at intervals of one minute two drops of the mixed Malt Extract and starch solutions which were kept carefully just at the temperature of 100° F.

In the case of sample A there was a continuous rapid diminution in the reaction for starch during the first ten minutes. During the next five minutes the rate was very much less, but there was some. From the sixteenth to the thirtieth minute testing I could see no change, the mixture at the end still giving a distinct blue color when the drop was let fall into the solution of iodine. After this, testing at intervals of five minutes, no further change occurred. Left, however, over night, in the morning the mixture no longer gave any color reaction with iodine.

The same experiment was made with sample B. This, however, at the end of the first hour and a half gave as strong a starch reaction as it did at the end of the first minute after the mixture was made, and was still about the same after standing over night.

Thus, the sample A had nearly exhausted itself in not quite completely converting its own weight of starch in fifteen minutes, while sample B had no special diastatic action at all.

Yours respectfully,
B. F. DAVENPORT,
Prof. of Analytical Chemistry.
BOSTON, Aug. 18, 1884.

TROMMER EXTRACT OF MALT Co.

Gentlemen:

I have this day made a comparative test of the diastatic power of Trommer's Extract of Malt and Maltine. Trommer's Extract of Malt converted double its weight of starch in six minutes, and gave no reaction for starch with the iodine test.

Maltine, treated in exactly the same way, liquefied the starch after a much longer time, but gave a decided reaction for starch with the iodine test, which remained permanent.

WM. W. BARTLET, Ph. G.,
Manufacturing Chemist and Druggist.

EAST BOSTON, Sept. 17, 1884.

This is to certify that we have sold for more than five years Trommer's Extract of Malt, during which time no unfavorable word whatever has been spoken against it. Its sales are steadily increasing, and the medical profession speak in the highest terms of its superiority over all other preparations of Malt and Maltine now in the market.

H. D. HUGGAN & CO., Druggists.
BOSTON, Sept. 22, 1884.

Having witnessed tests made between Reed & Carnrick's Maltine and Trommer's Extract of Malt, I am positively convinced of the superiority of the Trommer Extract in diastatic energy over all other preparations of Malt Extract and Maltine.

J. A. FULLER, M. D.

EAST BOSTON, MASS., Sept. 17, 1884.

I have witnessed tests of Trommer's Extract of Malt and Maltine, and find the Trommer Extract to contain a larger quantity of diastase.

OTTO VON DER HEYDE,
Druggist and Pharmacist, 137 Meridian, cor London street.

BALTIMORE, MD.

From J. F. Hancock; Prof. R. Dorsey Coale, Ph. D.; Robert T. Pitzold, Ph. G.; Charles H. Meyer.

TROMMER EXTRACT OF MALT Co.:

Gentlemen:

I have concluded to manufacture Malt Lozenges, and desiring to have them what their name implies, selected from stock in my store the two preparations of Extract of Malt for which I have the most sale—Trommer's Extract of Malt "with hops," and "Maltine" with hops, manufac-

tured by the Machine Manufacturing Company, in order to determine which is the better of the two.

After examining them myself, I submitted two samples to two chemists of well-known reputations as analytical chemists, marking Trommer's A, and the Maltine Company's B. These, as examined for me by Prof. R. Dorsey Coale, of the Maryland University, gave the following results:

"A. 1 gramme mixed with 200 cc. of 3¼ per cent starch paste, (containing 7 grammes starch) warmed at 100° to 102° F for 30 minutes, formed from the starch 1.740 of sugar calculated as maltose."

B—the "Maltine" and hops. He reports that the "sample marked B. has no appreciable effect upon starch, whatever."

The other chemist, who enjoys an equally good reputation, gave about the same results. To use his language: "Sample marked A is an excellent article, capable of readily converting nearly its own weight of starch into sugar at a temperature of 100° F. The sample marked B is capable of converting but 5.60 per cent. of starch under the conditions as above, and must, therefore be looked upon as a very inferior article."

I write you these results as a means of personal gratification, and will request your lowest quotation of Trommer's Extract of Malt, with hops, in bulk, for manufacturing lozenges, which I have no doubt will meet with ready sale as a pleasant and efficacious means of using Extract of Malt.

Yours very respectfully,
J. F. HANCOCK,

Manufacturing and Dispensing Chemist and Pharmacist.

P. S. In neither case did the chemists know whose preparations were given them to examine

Sample B (Maltine) had no special diastatic action.—
Prof. E. F. Davenport.

J. F. H.
BALTIMORE, Sept 15, 1884.

J. F. HANCOCK:

Dear Sir:

I examined the two samples of malt preparation received on the 12th inst., and marked respectively "A" and "B," with reference to their diastatic activity, with the following results: 1 gramme of "A" mixed with 200 cc. of 3¼ per cent. starch paste, (containing 7 grammes of starch), and the mixture warmed at 100° to 102° F. for 30 minutes, formed from the starch 1.740 grammes of sugar, calculated as maltose.

The sample marked "B" has no appreciable effect upon starch paste whatever.

Very truly yours,
R. DORSEY COALE, Ph. D.,
Prof. of Chemistry, University of Md.

Maltine (sample marked B) has no appreciable effect upon starch paste.—
Prof. R. Dorsey Coale.

BALTIMORE, MD., Aug. 26, 1884.

Some time ago, in the presence of a well known physician, I made a comparative test of the diastatic power of Trommer's Extract of Malt and Maltine. I found that Trommer's Malt converted starch rapidly, whereas Maltine seemed to have no effect on the starch. The tests were made at the same temperature, and both preparations were taken from stock bottles.

CHARLES H. MEYER,
Pharmacist, 497 Gay Street, corner of Dallas.

BALTIMORE, Aug. 26, 1884.

Having carefully tested various malt preparations, I am pleased to bear testimony to the superiority of the Trommer Malt Extract in its rapid and entire digestion of starch. I can conscientiously recommend it to the medical profession and public in general.

ROBERT T. PITZOLD, Ph. G.,
Pharmacist, cor. Baltimore and Exeter streets.

DETROIT, MICH.

From Prof. Clark, H. A. Frank, A. W. Allen, F. W. R. Perry, Ph. G. Wm. Dupont, James W. Caldwell, A. Bassett & Co., Frederick Rohmert, McFarland Bros.

LABORATORY OF DR. J. E. CLARK, MICHIGAN COLLEGE OF MEDICINE,
DETROIT, MICH., Aug 28, 1884.

It is well-known that the value of a malt preparation is dependent for its efficiency upon its value as a digestive agent, or upon the amount of a certain peculiar nitrogenous principle called diastase, which is developed in the barley during the process called malting.

This principle, acting upon the starchy matter of the food rapidly converts it into dextrose and sugar, thus rendering absorption into the system prompt and certain. In a comparative estimation, then, of preparations containing barley and its congeners as a basis of manufacture, a fair criterion by which to judge of nutrient value, and a positive indication of the methods of manufacture, will be a careful analysis of the amount of this diastase present.

By request of the Trommer Extract Company, I purchased, in the open market in this city, a bottle of their extract as well as one of the Maltine. After a careful series of experiments on each, I find indubitable evidence that the Trommer Extract is immensely superior as a digestive agent to the other preparation; Maltine, much to my surprise, being almost inert.

My experiments were conducted with a temperature as near the normal temperature of the body as possible, believing this to be the rational method under the circumstances.

Trommer's Extract is immensely superior to Maltine—the latter being almost inert.—Prof. J. E. Clark.

Parallel experiments with equal quantities of starch paste and the two malt preparations were made, when I found with Trommer's Extract evidence of diastatic action in 1½ minutes, a conversion of the starch into dextrine in 2½ minutes, and a complete conversion into sugar after 9 minutes.

With Maltine, under the same circumstances of time and temperature, no change was perceptible; in fact, after an exposure under those conditions for 10 hours the gelatinous conditions remained.

The superiority of the Extract of Malt is thus rendered apparent.

J. E. CLARK,

Prof. Chemistry and Physics, Michigan College of Medicine.

DETROIT, MICH., June 25, 1884.

By request, I made several tests as to the diastatic power of Trommer's Extract of Malt and Reed & Carnrick's Maltine.

I find that Trommer's Extract of Malt converts large quantities of starch, whereas Maltine has no appreciable effect on starch paste.

Both samples were taken from stock on hand.

Very respectfully,

WM. DUPONT.

DETROIT, June 26, 1884.

In comparing Trommer's Extract of Malt with Reed & Carnrick's Maltine, I find, from actual tests made from stock of both in my store, and made under exactly the same conditions, that Trommer's Extract of Malt does convert starch, while the Maltine of Reed & Carnrick does not.

JAMES W. CALDWELL,

Druggist, 242 and 524 Grand River avenue.

DETROIT, June 24, 1884.

By request of several physicians we made a comparative test of the diastatic action of Trommer's Extract of Malt and Reed & Carnrick's Maltine.

One drachm of Trommer's Extract of Malt converted four ounces of starch paste in four minutes. Maltine, under exactly the same circumstances, had no effect on the starch, showing the absence of diastase in the Maltine.

A. BASSETT & CO.

99 Woodward avenue.

DETROIT, MICH., June 25, 1884.

I have made comparative tests of the converting power on starch between Trommer's Extract of Malt and Reed & Carnrick's Maltine. I found Trommer's Extract of Malt much richer in diastase. Trommer's Extract of Malt converted starch before Maltine had any appreciable effect upon it.

FREDERICK ROHNERT,

Pharmaceutical Chemist.

DETROIT, MICH., June 24, 1884.

Comparing Trommer's Extract of Malt with Reed & Carnrick's Maltine, as to their diastatic power, after several tests we find that one drachm of Trommer's Extract converts four ounces of starch paste (made by adding two drachms of starch to four ounces of boiling water) in four minutes. The same test made with the same quantity of Maltine had no effect on the starch paste, showing absence of active diastase in Maltine.

The Extract of Malt and Maltine were taken out of our stock.

McFARLAND BROS.,

Prescription Pharmacists, 506, 508 and 603 Michigan avenue.

DETROIT, MICH., June 20, 1884.

In comparing Trommer's Extract of Malt with Reed & Carnrick's Maltine by actual tests made at different times, I always found Trommer's Extract superior, and can cheerfully recommend it to all physicians and druggists. Trommer's Extract of Malt does convert starch, while the Maltine does not.

H. A. FRANK,

Manufacturing Pharmacist, 291 and 293 Congress Street.

DETROIT, June 26, 1884.

In comparative tests of Trommer's Malt and Reed & Carnrick's Maltine taken from shelf to-day, as to their diastatic power, I find that Trommer's Malt converts rapidly and in large quantities, while Maltine has no perceptible effect, showing want of diastase.

A. W. ALLEN,

410 Grand River Avenue, Detroit, Mich.

DETROIT, MICH., June 24, 1884.

I have made comparative tests between Trommer's Extract of Malt and Reed & Carnrick's Maltine as to their diastatic power. The Extract of Malt converted starch rapidly and in large quantity, while Maltine under the same conditions had no perceptible effect on the starch, showing absence of diastase.

Both samples were taken from my shelves.

F W R. PERRY, Ph. G.,

709 Woodward Avenue.

BUFFALO, N. Y.

From Prof. R. A. Witthaus, Lyman & Jeffrey, Wm. H. Tibbs, A. A. DeNoon.

LABORATORY OF THE UNIVERSITY OF BUFFALO, }
BUFFALO, N. Y., Aug. 22, 1884. }

THE TROMMER EXTRACT OF MALT COMPANY, FREMONT, OHIO

Gentlemen:

I have submitted samples of your Ferrated Extract of Malt and of Ferrated Maltine to comparative tests as to their diastatic power, by determining the amounts of sugar, calculated as dextrose, produced by each under varying conditions of time and concentration, with the following results:

No.	GRAMS STARCH USED.	GRAMS MALTINE USED.	GRAMS DEXTROSE PRODUCED.	PARTS DEXTROSE PRODUCED BY ONE PART MALTINE.	GRAMS STARCH USED.	GRAMS EXTRACT MALT USED.	GRAMS DEXTROSE PRODUCED.	PARTS DEXTROSE PRODUCED BY ONE PART EXTRACT MALT.
1	5.0113	0.4901	0.0232	0.047	5.0039	0.4873	1.4667	3.01
2	5.0081	0.9308	0.031	0.03	5.0403	1.0128	2.3122	2.38
3	5.0060	0.5091	0.2025	0.57	5.0020	0.5975	1.5840	2.65
4	5.0107	1.0182	0.7644	0.75	5.0024	1.1949	1.8451	1.55

In each case the amount of water used was 100 grams. Trials Nos. 1 and 2 were made with samples obtained from Messrs. Harries & Bullymore, Buffalo, N. Y.; trials Nos. 3 and 4 with samples from Messrs. Fairchild's Bro. & Foster New York City. In No. 1 the mixture was warmed to 50° C. for two hours, and to 20° C. for fourteen hours, in No. 2 to 50° for two hours; and in Nos. 3 and 4 to 50° for one hour. In every case the treatment was absolutely identical for the two products examined.

From this analysis it appears that the Ferrated Extract of Malt very greatly exceeds the Ferrated Maltine in diastatic power.

Very respectfully,

R. A. WITTHAUS, A. M., M. D.,

Professor of Chemistry and Toxicology, University of Buffalo, Professor of Chemistry and Toxicology, University of Vermont; Professor of Physiological Chemistry, University of the City of New York, City Chemist to the City of Buffalo, N. Y.

BUFFALO, N. Y., Aug 1, 1884

TROMMER EXTRACT OF MALT CO.:

Gentlemen:

Our custom when requested to pronounce upon preparations which may pass into medical use is to test them both chemically and practically, so that we may establish for ourselves a positive basis on which to recommend or condemn.

We have tested your Malt Extract, and in our tests have placed it in competition with Maltine and similar preparations. From the results obtained we feel satisfied that the diastatic power claimed for your preparation is none too extravagant. The chemical results as supplemented by the practical, always the surest proof, have assured us that we may always recommend your Extract, and we have great pleasure in doing so whenever malt extract is required. Should there be any necessity, we shall be glad to furnish you with specific results of our experiments in the converting power of your Malt Extract as compared with other malt preparations.

Yours &c.,

LYMAN & JEFFREY,

Dealers in Drugs, Retail Department 311 Main Street.

BUFFALO, N. Y., Aug 1, 1884.

I have made comparative tests as to the diastatic power of Maltine and Trommer's Extract of Malt. On treating starch paste in the usual manner with equal quantities of these preparations, I find that Trommer's Extract of Malt is far superior in diastatic power to any that I have examined.

WM. H. TIBBS,

Proprietor St. James Pharmacy, 10 East Eagle Street

BUFFALO, N. Y., Aug. 1, 1884.

I have this day made a comparative test of Trommer's Extract of Malt and Maltine, and find that Trommer's Extract of Malt converts starch into sugar and dextrine rapidly, proving it to contain active diastase.

Maltine under identical circumstances had not the slightest effect on starch.

A. A. De NOON,

Pharmacist.

Trommer's
Ferrated
Malt greatly
exceeds
Ferrated
Maltine in
diastatic
power. —
Prof. R. A.
Witthaus.

PHILADELPHIA.

From P. Fitch, M. D.

PHILADELPHIA, Aug. 27, 1884.

I have made comparative tests of Trommer's Extract of Malt and the Maltine of the Maltine Manufacturing Company, as to diastatic value. One drachm of Trommer's Extract added to four ounces of starch paste in a few minutes converted the starch completely into dextrine and sugar, the solution remaining clear after the addition of iodine. Maltine did not even liquefy the starch, and after standing half an hour iodine gave the blue color showing the presence of starch.

The same conditions were strictly observed in making the tests of both preparations, and the samples used in each case were taken from the stock I had on hand.

P. FITCH, M. D.,

Druggist and Pharmacist.

WASHINGTON, D. C.

From Prof. E. T. Fristoe, H. A. Johnston & Co.

WASHINGTON, D. C., Sept. 12, 1884.

About two weeks since I was requested to make comparative tests to determine the diastatic value of samples of Extract of Malt manufactured by the Trommer Extract of Malt Company, and "Maltine," offered for sale in this vicinity.

In compliance with this request, and to avoid any possibility of seeming collusion, I asked one of our young men to purchase a bottle of each of these preparations from some reliable druggist in Georgetown, and not to inform the druggist for whom they were obtained. They were accordingly purchased, as the young man said, at the house of Geo. W. Cropley and his labels were on the bottles.

I have made the following tests: One gram of dry starch was made into a thick paste with twenty cc. of distilled water, and after cooling was brought to a temperature of between 100° and 110° F., and one gram of Trommer's Extract of Malt, "with hops," was added, and the whole kept at the temperature named. After five minutes it was tested with iodine, and gave still some blue color. At the end of eight minutes it ceased to produce any blue color in the mixture—showing that the starch had all been converted. At the same time, with the same amount of Maltine, "with hops," and starch, and under precisely the same conditions, I made similar tests. At the end of five minutes after adding the Maltine no apparent change was produced in the starch, as shown by iodine. At the end of 8, 10, 15, and 30 minutes, it was successively tested with iodine, when there seemed to be little, if any, change produced in the blue color given by iodine. At the end of two hours, when I ceased to test further, the iodine still produced the same marked blue color.

E. T. FRISTOE

Prof. of Chemistry in the Columbian University.

WASHINGTON, D. C., Aug. 24, 1884.

We have made comparative tests of Trommer's Extract of Malt, and "Maltine," and find that Trommer's Malt Extract converts starch rapidly. The Maltine tested had no perceptible effect on starch paste. Both preparations were taken out of our stock.

H. A. JOHNSTON & CO., Pharmacists,
Penn. avenue, bet. 13th and 14th sts., and cor. 10th and O sts., Northwest.

CHICAGO, ILL.

From T. H. Patterson, M. D.; D. R. Dyche & Co.; Edward Long, Ph. G.; M. A. Colman, Ph. C.; Clapp & Gregory; J. J. Harrington.

CHICAGO, July 16, 1884.

TROMMER'S EXTRACT OF MALT CO.:

Gentlemen:

At the request of a physician, I have made a qualitative analysis of Trommer's Extract of Malt and the Maltine Manufacturing Company's Maltine, the tests in each case being the same.

I find Trommer's Extract converts starch very rapidly, while the Maltine appears to have no effect upon it whatever, thus showing that the latter contains no appreciable quantity of active diastase.

T. H. PATTERSON, M. D.

Secretary Illinois Pharmaceutical Association.

CHICAGO, ILL., July 18, 1884.

TO THE MEDICAL PROFESSION:

We have made a careful comparative test of four preparations of Extract of Malt and Maltine, and find that Trommer's Extract of Malt is far superior in the starch digestive principle, diastase, and we will use it exclusively in prescriptions unless otherwise ordered.

D. R. DYCHE & CO.,

Druggists and Chemists, N. W. cor. State and Randolph streets.

CHICAGO, July 17, 1884.

TROMMER EXTRACT OF MALT CO.:

Gentlemen:

I have examined and tested your Extract of Malt, purchased in open market, as well as samples from other manufacturers, obtained in a similar way, and I am satisfied that Trommer's is by all odds the most efficient preparation of its kind I have yet encountered.

Yours respectfully,

EDWARD LONG, Ph. G.,

Dispensing Chemist, 303 Blue Island avenue.

CHICAGO, July 17, 1884.

TO THE MEDICAL PROFESSION:

I have made three comparative tests of three manufactures of Extract of Malt, taken from stock, obtaining the following results:

1. Maltine did not convert any starch.
2. Trommer's converted starch rapidly.
3. (Manufacturer's name not furnished) converted starch slightly.

Conditions of applying tests the same in each case.

I would state that I shall use Trommer's Extract in all preparations knowing the object desired will be obtained.

M. A. COLMAN, Ph. C.

327 West Van Buren street.

CHICAGO, July 15, 1884.

By request of a number of physicians we lately made qualitative analysis of Trommer's Extract of Malt and Reed & Carnrick's Maltine, the application of tests being under like conditions in both cases.

We find Trommer's Extract convert's starch *very rapidly*, while Maltine has apparently no effect upon it, thus proving that there is no perceptible amount of diastase in Maltine.

CLAPP & GREGORY.,

Chemists and Pharmacists, 527 and 529 State st., cor. Harmon Court.

CHICAGO, ILL., July 16, 1884.

I have made several comparative tests as to the diastatic power of Trommer's Extract of Malt and Maltine, and find that Trommer's Extract of Malt contains active diastase, shown by its action on starch paste—whereas Maltine had no effect on starch.

Both samples were taken from my stock.

J. J. HARRINGTON,

Druggist, cor. Rush and Illinois sts., and cor. State and Michigan sts.

CINCINNATI, O.

From C. E. Potts & Co., Charles A. Doerr, Ph. G.; John C. Otis & Co., J. H. Linnemann, Ph. G.

CINCINNATI, July 23, 1884.

We have made comparative tests as to the converting or diastatic power of Trommer's Extract of Malt and the Maltine Manufacturing Company's Maltine.

One drachm of Trommer's Extract converted 4 ounces of thick starch paste into dextrine and sugar in a few minutes, whereas the Maltine, under similar circumstances, had no perceptible effect on the starch.

The test was made at the same temperature by us, and both preparations were taken from our stock.

C. E. POTTS & CO.,

Druggists, Third to Fifth Street.

CINCINNATI, July 25, 1884.

TROMMER EXTRACT OF MALT CO.:

Gentlemen:

I have just completed a comparative examination of your Extract of Malt and "Maltine" as to their diastatic power. Samples from my stock of both preparations were subjected to the same tests under the same conditions. I find that a certain quantity of your Extract of Malt completely converted a certain amount of starch paste, the iodine test not showing the least perceptible blue coloration, whereas Maltine seemed to have no effect upon the starch in the same proportion, not even liquefying it, but gave a decided blue coloration with iodine, thus showing conclusively that your Extract of Malt is far superior to Maltine as a digestive agent.

CHARLES A. DOERR, Ph. G.,

Pharmacist, Vine and Liberty Streets.

CINCINNATI, O., July 23, 1884.

In order to satisfy ourselves in regard to the diastatic power of "Maltine" and Trommer's Extract of Malt, we concluded to make a fair and impartial test. A starch paste was made by boiling three drachms of starch with seven ounces of water, and the paste equally divided in two glass vessels. A fresh bottle of each of the respective preparations was taken from our shelves, and a drachm of each of the extracts was placed in the different vessels. In three minutes the starch paste containing the Trommer Extract was perfectly fluid and gave the faintest indication of starch when the iodine test was applied, while the paste to which Maltine was added remained thick, and when tested with iodine gave the strongest indication of starch. In five minutes the former paste gave no reaction whatever with iodine, showing its entire conversion into sugar and dextrine, while the latter remained thick, and after three hours there was no perceptible change.

JOHN C. OTIS & CO.,

Pharmaceutical Chemists, south-east corner Ninth and Vine Streets

Maltine produced no apparent change in the starch at the end of two hours.
—Prof. E. T. Fristoe.

CINCINNATI, O., July 24, 1884.

I have made comparative tests as to diastatic power of the Extract of Malt manufactured by the Trommer Extract of Malt Company and R. & C.'s Maltine, from samples taken from freshly opened bottles in stock.

I found that Trommer's Extract liquefied the starch paste almost instantaneously, and that by a subsequent test with iodine the solution showed no trace of starch, proving its entire conversion. The Maltine, had, however, no apparent effect on the starch, and the iodine test gave decided evidence of the presence of the latter.

J. H. LINNEMANN, Ph. G.,

Druggist, Park avenue and Chapel street, Walnut Hills.

CLEVELAND, O.

From Prof. Morley, Emil Bixel, Henry W. Stecher, Ph. C., C. S. MacKenzie & Co.

Samples of "Maltine," manufactured by the Maltine Manufacturing Company, and of Extract of Malt, manufactured by the Trommer Extract of Malt Co., taken from stock in his drug store, and marked respectively No. 1 and No. 2, by Dr. J. H. Peck, of Cleveland, O., and by him submitted to Prof. Morley for analysis, gave the following result:

"The sample marked No. 1 will change into sugar only its own weight of starch, when digested 15 minutes at 60° C.

Sample No. 2 will convert $\frac{2}{3}$ its own weight of starch in the same time and at the same temperature."

EDW. W. MORLEY,
Prof. Chemistry.

CLEVELAND, O., July 23, 1884.

I have made a comparative test of Trommer's Extract of Malt and Maltine and find that Trommer's Extract of Malt converts starch into dextrine and sugar rapidly. Maltine appears to have no effect on starch, thus proving the superiority of Trommer's Extract of Malt as a digestive agent. Both bottles were taken from stock on hand.

EMIL BIXEL,
Pharmacist, 109 Ontario Street.

CLEVELAND, July 20, 1884.

I have examined samples of Trommer's Extract of Malt and Maltine, with the object of comparing their diastatic power. I find that, under exactly the same circumstances, the Trommer Extract speedily and completely converts all the starch used in the test, while Maltine is without any appreciable effect. The temperature at which the tests were made was 100° F., being nearly the normal temperature of the body.

Samples of both were from stock purchased at the wholesale houses.

HENRY W. STECHER, Ph. C.,
Druggist and Chemist, 1066 Pearl street.

CLEVELAND, O., July 30, 1884.

After having made comparative tests of the diastatic power of Trommer's Malt Extract and Maltine, we gladly certify to the superiority of the former. Even by adding twice as much Maltine to the solution of starch it showed hardly any diastatic power. Trommer's is perfectly satisfactory. By the iodine test the starch employed was shown to be completely converted, while that to which the Maltine was added continued to form a blue precipitate.

C. S. MACKENZIE & CO.,
Druggists, Superior Street.

LOUISVILLE, KY.

From Vincent, Davis & Co., S. P. Walker.

LOUISVILLE, KY., July 21, 1884.

This is to certify that we made comparative tests between Trommer's Extract of Malt, Reed & Carnrick's "Maltine," Shaker Malt Extract, and Tilden's Extract of Malt in regard to their diastatic power. The tests were made under the same conditions in each case. Starch paste was prepared and divided into four equal quantities, and one drachm of each of the extracts added, and with the exception of that with which Trommer's Extract was mixed, no appreciable effect was produced. The latter converted the starch into dextrine, etc. A small portion of this was tested with iodine, and no blue coloration was produced, showing the absence of starch. In the other preparations the starch did not seem to be affected in the least.

Thinking that perhaps some of the preparations had been improved in their diastatic power, we subsequently repeated these tests of Shaker Malt Extract, "Maltine," Hoff's Malt Extract and Trommer's Extract of Malt, using starch paste and proceeding as before, with the same result, Trommer's Extract being the only one that converted the starch—showing conclusively that the extract of malt made by the Trommer Extract of Malt Company is far superior to any other preparation we have seen in diastatic power, acting on starchy food as pepsin does on albuminous.

VINCENT DAVIS & CO.,
Pharmacists, Fourth Avenue, corner Green.

LOUISVILLE, KY., July 21, 1884.

I have made tests to determine the comparative diastatic power of Trommer's Extract of Malt and Maltine. One drachm of Trommer's Ex-

tract of Malt was added to four ounces of starch paste, (prepared by both ing two drachms of corn-starch in four ounces of water), converted the starch completely in a few minutes, as shown by taking a few drops of the solution to an ounce of water and adding solution of iodine, which gave no blue reaction. Maltine, under exactly the same conditions, had no effect on the starch paste—not even liquefying it—and after at least an hour iodine gave the characteristic blue re-action, showing Trommer's Extract far superior to Maltine in its diastatic power.

Both bottles were taken from my stock.

S. P. WALKER,
Apothecary, 301 West Walnut Street.

ST. LOUIS, MO.

From C. Klipstein, C. E. Holtzclaw & Co.

St. Louis, Mo.

Experimenting on malt extracts, I found that Trommer's Extract of Malt had the property of converting starch into dextrine and sugar, which Maltine, for instance, failed to exhibit.

C. KLIPSTEIN,
Pharmacist, New No. 1600 Franklin Avenue.

St. Louis, Mo., July 19, 1884.

We have made a careful comparative test of Trommer's Extract of Malt and the Maltine of the Maltine Manufacturing Company, as to their relative digestive qualities. We find, on taking the same quantities of each at the same temperature, that the Extract of Malt converts the entire amount of starch, to which it is added, leaving a clear solution. The Maltine added to the same quantity of starch has no perceptible effect on it, and after standing an hour it remains the same thick, glutinous mixture. We believe the Malt Extract is far superior to the Maltine as a digestive agent. Both preparations were taken from our stock.

C. E. HOLTZCLAW & CO.,
Laclede Pharmacy.

ROCHESTER, N. Y.

From Haskin & Smith, Czar Dunning.

ROCHESTER, N. Y., Aug. 2, 1884.

We have made comparative tests of Trommer's Extract of Malt and "Maltine" as to diastatic strength, and find that while the former converts starch in considerable quantity, the Maltine does not affect it perceptibly. These tests have been carefully made under similar conditions, and the samples used taken from our own stock.

HASKIN & SMITH,
Druggists and Apothecaries, 66 West Main Street.

ROCHESTER, N. Y., Aug. 2, 1884.

I have made several tests as to the diastatic power of Trommer's Extract of Malt and Reed & Carnrick's Maltine.

Trommer's Extract of Malt converts starch rapidly into dextrine and sugar, Maltine, under the same test effected no change in the starch, proving conclusively that Trommer's Extract of Malt is far superior as a digestive agent. Both samples were taken from my stock.

CZAR DUNNING,
Pharmacist, 245 East Main Street

SYRACUSE, N. Y.

From Edward S. Dawson, Jr.,

OF BROWN & DAWSON, APOTHECARIES AND MANUFACTURING CHEMISTS,
SYRACUSE, N. Y.

Gentlemen:

In view of the fact that much has been said about the relative diastatic power of Trommer's Extract of Malt and "Maltine," I determined to make experiments qualitatively to satisfy myself on that particular point.

The results convince me that Trommer's Extract of Malt contains a larger percentage of active diastase than does the "Maltine." The experiments were simple and very interesting, and were based on the theory that diastase, if present in either the Malt Extract or the article called "Maltine," would convert starch, under certain conditions, into dextrine and sugar. My method of conducting the experiments was as follows: Two hundred and forty grains of corn-starch were thoroughly mixed with eight fluid ounces of cold water, and the mixture heated until the starch granules were perfectly disintegrated and a smooth mucilage resulted. This mucilage was allowed to cool to 110° F. and treated with a mixture of two fluid drachms of Trommer's Extract of Malt and two fluid drachms of water. As a result, the mucilage was liquefied immediately, and at the end of 7 minutes gave no indication of the presence of starch, as determined by the iodine test.

In a similar manner I experimented with "Maltine," which caused the mucilage to become thin, but after the lapse of seven minutes the iodine test still indicated the presence of starch by the characteristic blue coloration.

I next experimented with Trommer's Malt Extract with hypophosphites, and Maltine with hypophosphites, in the same manner as the preceding, except that I used equal parts of each of the preparations, and of starch. The result was the same with the Trommer Extract, there being no indication of starch after the lapse of four minutes. With the Maltine with hypophosphites the mucilage was not even thinned, and after ten minutes, showed indications of the presence of starch.

I do not know whether a knowledge of these results will be of any particular value to you, but if it will then you are welcome to it. In conclusion, I wish to add that the preparations herein mentioned were taken from our stock.

I remain, yours truly,
EDW. S. DAWSON, JR.,

29 WEST FAYETTE ST., COR. CLINTON, }
SYRACUSE, N. Y., Aug. 4, 1884.

We have made comparative tests as to diastatic or converting power of the Extract of Malt manufactured by the Trommer Extract of Malt Co., and "Maltine," in each case taking bottles from our stock that had been opened and partly used in prescriptions.

By making eight ounces of thick starch paste, dividing into two glasses, then adding one drachm of each. Trommer's liquefied the paste immediately, and in less than five minutes gave no reaction for starch with iodine. Maltine added in the same way had no effect on the paste. Trommer's Extract of Malt is far superior in diastase.

SMITH & DALTON, Druggists.

COLUMBUS, O.

From W. H. H. Nash, M. D.; E. N. McCarter.

COLUMBUS, O., Aug. 1, 1884.

I procured of Mr. E. N. McCarter, prescription druggist of this city, a bottle each of Trommer's Extract of Malt and of Maltine. I tested both preparations in the same manner—using one fluid drachm of each to about two ounces of starch paste prepared in the usual way. That to which Trommer's Extract was added, in a very short time, one minute or less, became quite fluid, while that mixed with the Maltine remained nearly as before. After the lapse of some minutes, I applied the iodine test to both. The paste to which the Malt Extract had been added gave no starch reaction whatever. That containing the Maltine gave a marked reaction and deep blue color, showing the presence of starch.

I need only add that I have been convinced for years of the excellence of the Trommer Extract of Malt, and have been in the habit of designating it when desiring to prescribe a preparation of malt.

W. H. H. NASH, M. D.

COLUMBUS, O., July 28, 1884.

TROMMER EXTRACT OF MALT COMPANY, FREMONT, O.:

Gentlemen:

That I might satisfy myself of the comparative diastatic value of Trommer's Extract of Malt and Maltine, I have this day taken from my own stock samples of each and have accurately tested both preparations. I take pleasure in saying I find the Trommer Extract of Malt by far superior to Maltine in diastatic action. I have sold your Malt Extract for over seven years, and now being thoroughly satisfied as to its superiority I will take pleasure in recommending it in preference to all others.

Respectfully, etc.,
E. N. McCARTER,
Pharmacist, Corner Long and Seventh Streets.

INDIANAPOLIS, IND.

From Prof J. N. Hurty.

INDIANAPOLIS, Sept. 10, 1884.

I purchased from Browning & Sloan, of this city, one bottle of "Maltine" and one of Extract of Malt manufactured by the Trommer Extract of Malt Company, and subjected them to the same treatment with the following result: 100 parts of dry starch are converted by 6.2 parts of Trommer's, while the same quantity of starch requires 15.5 parts "Maltine."

J. N. HURTY, M. D.,
Prof. Pharmacy, Purdue School of Pharmacy.

STATEMENTS OF PROMINENT DRUGGISTS AND PHARMACISTS IN OTHER CITIES.

PROVIDENCE, R. I., Aug. 20, 1884.

I have made comparative tests of Trommer's Extract of Malt and Maltine, with the following result: Trommer's digested double its own weight of starch in six minutes, and gave no reaction for starch with the iodine test. Maltine, treated in precisely the same manner, liquefied the

starch, but gave a very strong reaction with iodine, showing the permanent presence of starch.

I was surprised at the result and shall take much pleasure hereafter in recommending Trommer's as the best.

GEORGE E. COMAN,

Of FAIRBANKS & COMAN, Pharmacists, 39 Manton avenue.

ALBANY, N. Y., Aug. 6, 1884.

TROMMER EXTRACT OF MALT Co.:

Gentlemen:

As the object of Malt Extract is to convert starchy matter into dextrine and sugar, so the intrinsic value of the Extract of Malt depends on its diastatic power.

There being some discussion on this point, as to the relative merit of some of the preparations on the market, we determined to test them. We found after a fair trial that Trommer's Extract is decidedly the most satisfactory, as it liquefied the starch paste immediately, and in four minutes from the time it was added the iodine test showed no reaction indicating the presence of starch, thus proving the complete conversion of the latter into dextrine and sugar.

Sincerely,

CLEMENT & RICE,

Druggists and Apothecaries, 684 and 686 Broadway, and 1 Clinton ave.

UTICA, N. Y., Aug. 5, 1884.

We have made a comparative test as to the diastatic power of Trommer's Extract of Malt and Maltine. We made the test as recommended in the *American Journal of Pharmacy*, and find that Trommer's Extract of Malt converts starch into sugar and dextrine in four to five minutes, whereas, Maltine had very little effect on the starch, not even liquefying it.

Both bottles were taken from our stock, and the test was made at the same temperature—100° Fahrenheit.

HOWARTH & BALLARD, Pharmacists,
138 Genesee street.

WORCESTER, MASS., Aug. 20, 1884.

TROMMER EXTRACT OF MALT Co.:

Gentlemen:

I recently made careful tests of the digestive power of your Extract of Malt, and "Maltine." The tests were made as recommended in the *American Journal of Pharmacy*, and I find that Trommer's Extract of Malt converts the starch into sugar and dextrine in about four minutes at 100° F. With the same test the action of the Maltine was much slower and the solution not complete. The starch reaction with iodine was very noticeable in the Maltine solution, while with that to which your extract was added not a trace was to be seen. The samples used were taken from my stock.

FRANKLIN H. STODDARD, Ph. G.
Pharmacist, 498 Main Street.

SPRINGFIELD, MASS., Aug. 22, 1884.

I have made tests in regard to the comparative diastatic properties of Trommer's Extract of Malt and Reed & Carnrick's Maltine, Pepsin and Pancreatine.

I find that under the same tests Trommer's Malt completely converts starch in sugar, etc., while there is no material change with Maltine, Pepsin and Pancreatine.

E. O. GATES, Druggist,
232 Main Street.

TROY, N. Y., Aug. 4, 1884.

I to-day made a comparative test between Trommer's Extract of Malt with Hypophosphites and "Maltine" with Hypophosphites, as to diastatic power. The former converted starch rapidly, while Maltine, under the same circumstances, had no perceptible effect on the starch, as shown by the iodine test.

Both samples were taken from my stock.
E. W. STODDARD,
Drug and Prescription Store, 63 and 70 Congress st., cor. Third.

GRAND RAPIDS, MICH., July 11, 1884.

Having made a comparative test of Trommer's Extract of Malt and Reed & Carnrick's Maltine, I find the Extract of Malt converts starch rapidly at 100° F., while Maltine, under exactly the same test, showed no change in the starch paste, showing absence of diastase in Maltine.

Both samples were taken from my stock.

E. R. WILSON,
Druggist, cor. Monroe and Ottawa sts.

BAY CITY, MICH.

In making comparative tests between Trommer's Extract of Malt and the Maltine (plain), and Maltine, Pepsin and Pancreatine, I find that the R. & C. Maltine preparations have very little diastatic power, while Trommer's acts immediately on starch, liquefying it completely, the iodine test applied in a few minutes, showing no trace. The samples tested were taken from stock in store.

MASON & BEACH, Druggists.

DAYTON, O., Aug. 13, 1884.

I have taken a bottle of Trommer's Extract of Malt and one of Maltine from my own stock and subjected both to the same chemical test. I find Trommer's Extract to be far superior to Maltine in digestive properties, and to contain all the active principles claimed in the analysis.

J. M. MCKINLEY, Pharmacist.

100 parts dry starch are converted by 6.2 parts of Trommer's Extract—the same quantity of starch requires for its conversion 15.5 parts of Maltine.—
Prof. J. N. Hurty.

SAGINAW, MICH., July 8, 1884.

We have made comparative tests between Trommer's Extract of Malt and Maltine, to determine their comparative diastatic power. The Extract of Malt converted starch rapidly and in large quantity, while Maltine under the same conditions, had no perceptible effect on the starch, showing absence of diastase.

Both samples were taken from bottles in our stock.

KEELER & HOGEBOOM.

EAST SAGINAW, MICH.

In making comparative tests between Trommer's Extract of Malt and Maltine, I find that Trommer's Extract of Malt converts starch rapidly, while Maltine, under exactly the same tests, had no perceptible effect on starch.

Samples of each were taken from bottles in stock.

H. G. HAMILTON,

Druggist, cor. Genesee and Jefferson avenues.

SPRINGFIELD, O., Aug. 12, 1884.

I have made a practical and thorough chemical test of Trommer's Extract of Malt and also Maltine, both preparations having been taken from my own stock.

I unhesitatingly state that Trommer's Extract is far superior in digestive qualities, converting starch into dextrine and sugar with great rapidity.

C. A. ROBERTS,

Druggist and Pharmacist.

SPRINGFIELD, O., Aug. 12, 1884.

TROMMER EXTRACT OF MALT CO.:

Gentlemen:

I have procured a bottle each of Trommer's Extract of Malt and Maltine from the stock of a well-known druggist, and have tested them accurately, subjecting both to the same tests. I am satisfied beyond all doubt that the Extract of Malt is far superior to Maltine in digestive properties.

J. M. KILGORE, M. D.

CANTON, O., Aug. 27, 1884.

In making comparative tests to determine the digestive properties of Trommer's Extract of Malt and Maltine, I find that the former completely converts starch into dextrine and sugar, while the latter, tested in the same manner, gave the characteristic starch reaction with iodine.

P. H. BARR,

Druggist and Pharmacist.

AKRON, O., Aug. 26, 1884.

Having tested, in an appropriate manner, Trommer's Extract of Malt and Maltine, the former proved to be without doubt the better preparation, as it promptly converts starch into dextrine and maltose, and is, therefore, an efficient digestive agent.

The samples used were taken from our own stock.

WARNER & HOLLINGER,

Druggists and Chemists.

Mt. VERNON, O., Aug. 19, 1884.

We took from our shelves a bottle of Maltine and a bottle of Trommer's Extract of Malt and applied the same tests to both.

We found the Trommer Extract of Malt to be far superior in digestive power to the Maltine.

BEARDSLEE & BARR,

Apothecaries.

MANFIELD, O., Aug. 19, 1884.

I have made a thorough test of Trommer's Extract of Malt and of Maltine, from samples taken from my own stock, and find Trommer's Extract of Malt far superior to Maltine in its digestive qualities.

F. H. HOLLIS,

Pharmacist.

MARION, O., Aug. 23, 1884.

I have taken much pains to make thorough and careful tests of the Trommer Extract of Malt and the preparation called "Maltine," and do not hesitate to say that the digestive qualities of Trommer's Extract, as indicated by the rapid manner in which it converts starch into dextrine and sugar are far superior to those of Maltine. The samples employed in the experiments were from my own stock.

L. DENISON,

Of L. Denison & Co., Druggists and Pharmacists.

LONDON, OHIO, Aug. 15, 1884.

I have made comparative tests of Trommer's Extract of Malt, and Maltine, for the purpose of determining their digestive qualities, and find the Trommer Extract far superior to Maltine in this respect. Samples tested were taken from our stock on hand, and the same tests employed in both cases.

S. D. KUMLER,

Pharmacist, with Robinson & Riddle.

MARYSVILLE, O., Aug. 4, 1884.

In testing Trommer's Extract I find that it digests a thick paste of potato starch so perfectly that a solution of iodine does not give the character-

istic blue re-action when added to it after proper dilution. Tested in the same manner, "Maltine" taken from my stock does not digest the starch paste, which the iodine solution very readily shows.

JAS. W. FIELD,

Druggist and Apothecary.

MARYSVILLE, O., Aug. 4, 1884.

Having made a comparative test of Trommer's Extract of Malt and "Maltine"—the samples procured from our druggist—we find that the Trommer's Extract completely digests starch, while the Maltine has no influence upon it whatever.

RODEBAUGH & LISLE,

Physicians and Surgeons.

NEWARK, O., Aug. 5, 1884.

I have tested a bottle each of Maltine and Trommer's Extract of Malt, taken from my own shelves, and find that starch is easily converted by the latter, while Maltine in the same quantity produces no appreciable change.

E. NICHOLS, Druggist.

NEWARK, OHIO, Aug. 5, 1884.

I have carefully tested a bottle each of Trommer's Extract of Malt and the Maltine Manufacturing Company's Maltine. I find that Trommer's Extract mixed with potato starch in solution rapidly digests it, while Maltine added in the same quantity and manner has no appreciable effect. This, to my mind, is conclusive that Trommer's Extract of Malt is far superior to Maltine as a digestive of starchy food.

A. T. SPEER, M. D.

DELAWARE, OHIO, Aug. 6, 1884.

After carefully testing different malt preparations found in the market, I find Trommer's Extract of Malt much superior in diastatic power to any other, and can, therefore, conscientiously recommend it.

F. J. R. PFIFFNER.

CIRCLEVILLE, O., Aug. 4, 1884.

I have made a comparative examination of Trommer's Extract of Malt with some other malt preparations found on the market, by the ordinary tests, and ascertained that Trommer's Extract, of Malt is far superior to all others examined, on account of the diastatic power it possesses of changing starch into sugar.

WM. WARNER, M. D.,

Prof. Hist. and Path., Columbus Med. College.

XENIA, O., Aug. 16, 1884.

In a comparative examination of Trommer's Extract of Malt and "Maltine," made from samples taken from stock, I do not hesitate to say that the former was found to be superior to the Maltine in digestive properties. The same test was applied to both preparations.

S. M. KELSO.

GALION, OHIO.

I have tested a sample of "Maltine," also one of Trommer's Extract of Malt, both taken from the shelves of M. H. McLain's drug store, and found Trommer's Extract far superior in digestive properties.

O. W. KOTZ,

Pharmacist.

YOUNGSTOWN, OHIO, Aug. 26, 1884.

I have examined by appropriate tests Trommer's Extract of Malt, and "Maltine" and find the former superior in digestive power. Samples were taken from our own stock on hand.

M. T. JEWELL, Druggist.

LANCASTER, OHIO.

We procured a sample each of Trommer's Extract of Malt, and "Maltine" from our druggist, and made the ordinary test. The Trommer Extract of Malt rapidly and completely digests starch, while Maltine does not. We have been for a long time extensively using the Trommer Extract of Malt in our practice as a food for infants, and have always been perfectly satisfied with the results.

BOERSTLER & GOSS,

Physicians and Surgeons.

LANCASTER, OHIO, July 30, 1884.

I made an examination of two bottles, one of Trommer's Extract of Malt and the other of "Maltine" by the ordinary test, and found that the former rapidly converted starch, so that no discoloration was produced by adding a solution of iodine, and the other failed completely by the same test. These bottles were taken from my shelves, and the manipulations were similar in each case.

E. L. STOCUM,

Druggist and Pharmacist, cor. Main and Columbus sts.

Piqua, O., Aug. 8, 1884.

I have tested Trommer's Extract of Malt and "Maltine," both from my own stock, and found that Trommer's Extract converts starch much more rapidly than Maltine does, showing, in my judgment, superior digestive qualities.

E. JOHNSON, Druggist.

PORTSMOUTH, O., Aug. 30, 1884.

I have subjected samples of both Trommer's Extract of Malt and "Maltine" to careful analysis, in accordance with approved methods, to ascertain the diastatic value of each.

I find that the former readily converts starch into dextrine and maltose, while the latter is certainly much inferior in this respect.

Both were tested in the same manner and taken from stock on my own shelves.

ENOS REED.

"Malt Extract has almost entirely taken the place of Cod Liver Oil in the treatment of Phthisis and other wasting diseases, at the Basle Hospital."

ZIEMSEN'S CYCLOPÆDIA, Vol. XVI, p. 474.

OPINIONS OF TROMMER'S EXTRACT OF MALT.

"Trommer's Extract of Malt is a very efficient preparation, which deserves the favorable consideration of rational physicians."—*L. P. Shucking, M. D., Washington, D. C.*

"Have secured much benefit in case of general depreciation of the system accompanying ovarian disease from Trommer's Extract of Malt."—*P. Adolphus, M. D., Chicago.*

"Have been using your Extract of Malt with results so satisfactory that in making them known I feel I do the profession a service."—*D. Norton, M. D., Louisville.*

"Have used Trommer's Extract of Malt in weak digestion debility, and in chest cases (combined with cod liver oil), and have uniformly found it particularly valuable."—*C. S. Parke, M. D., Quebec.*

"In functional derangement of the stomach and bowels the combination of Trommer's Extract of Malt with pepsin is most valuable; and in the emaciation following the summer diarrhoea of children it supplies a physiological medicine of extraordinary restorative power."—*J. A. Grant, M. D., M. R. C. P., London, Eng.*

"As Superintendent of the Public Lying-in-Hospital wards of the Woman's Hospital, I have had excellent opportunity of testing the Trommer preparations. * * * A large number of our patients were in a very debilitated condition, and after confinement required special treatment. These preparations, more especially that with cod liver oil, were found of the greatest benefit. Their restorative power was very marked, patients regaining strength and a healthy state of blood much more rapidly than had previously been observed."—*R. A. Kennedy, M. A., M. D., Prof. Midwifery and Diseases of Women, etc., Univ. Bishop's Coll., Montreal.*

"I have tried Trommer's Extract of Malt, and can recommend it as the best I have ever used."—*H. Lawenstein, M. D., Brooklyn, N. Y.*

"Have used all your preparations, and am convinced they have performed wonders in my hands."—*W. G. Austin, M. D., New Orleans.*

"The more I give Trommer Malt Extract the better I am pleased with its therapeutic action in certain of the most common chronic maladies."—*E. R. Palmer, Prof. Physiology, etc., Univ. of Louisville, Louisville, Ky.*

"Find an increasing use of this remedy in my practice, and should not know how to get along without it."—*E. S. Dunster, Prof. Obstetrics and Diseases of Women, Univ. of Michigan, Ann Arbor, Mich.*

"I look upon Trommer's Extract of Malt as the most valuable aid we possess in all cases where debility, impaired digestion and malnutrition obtain."—*J. B. McConnell, M. D., Prof. Chemistry, etc., Univ. Bishop's Coll., Montreal.*

"Have been using Trommer Extract with excellent results; very serviceable in certain forms of dyspepsia; agrees with the most fastidious stomach."—*Canada Lancet, Toronto.*

"Trommer's Extract converts starch into maltose and dextrine rapidly and in large quantity. Seems to be steadily increasing in favor for diseases involving impaired nutrition."—*London Lancet.*

"Trommer's Extract of Malt is employed with great advantage in the wasting diseases of children, both as a nutrient and to improve digestion."—*Cincinnati Medical Times*

"There are many conditions in infancy, old age and debility where a physician, once acquainted with the value of Trommer's Extract of Malt, would be at a loss to replace it."—*Medical and Surgical Reporter, Philadelphia.*

"I have given Trommer's Extract of Malt to over three hundred patients during the past year, and have yet to see a single case in which benefit has not accrued from its use. It may be said that the medicines contained in some of the preparations should have the credit, but I have been careful to use such preparations in cases where the medicinal agents therein contained have before been given with little or no advantage. In tuberculosis and scrofulosis I have found Malt Extract to improve nutrition and arrest the progress of the disease, acting similarly to cod liver oil, save that its effects are more decided."—*John A. Larabee, Prof. of Materia Medica and Therapeutics, etc., Hospital College of Medicine, Louisville, Ky.*

"During convalescence from fevers, in cases of phthisis, in certain forms of dyspepsia, and generally in all cases of malnutrition, we have found Trommer's Extract of Malt of very great value."—*Ohio Medical Recorder.*

"There are few remedies which to a greater extent offer *a priori* grounds for their use. The clinical evidence, too, which has sanctioned the physiological claims of Malt Extract, is abundant."—*Louisville Medical News.*

"Trommer's Extract of Malt is adapted to a wide range of cases requiring supplementary food; acceptable to the stomach; aids digestion; an excellent vehicle for other medicines; and will keep in the hottest climate."—*Medical Journal, Wilmington.*

"The Trommer Company has hitherto taken the lead in the introduction of the Extract of Malt. The uniformity and reliable character of this Extract has induced an enormous demand and sale, so that we presume there is scarcely a drug-house on the continent that does not supply it."—*Obstetric Gazette, Cincinnati.*

"One of the best of the various preparations of a similar character. Prof. Redwood finds Trommer's Extract has all the power of acting on amylaceous bodies."—*London Chemist and Druggist.*

"The preparations of Malt manufactured by the Trommer Company are too well known to require commendation. Malt fills a place in the treatment of disease of the utmost utility."—*Courier of Medicine, St. Louis.*

"Trommer Extract of Malt has grown so rapidly in favor with the profession that there are few practitioners in Canada who do not regularly prescribe it."—*Canada Medical Record.*

"The Trommer Company was the first to bring prominently before the American profession the virtues of Malt Extract. As a Malt Extract we have no hesitancy in saying that there is no brand in the market its equal in every respect."—*Medical Advance, Detroit.*

"Eminent practitioners, including most of the leading teachers, speak of Trommer's Extract of Malt in the highest terms. Independently of the obvious merit of the preparation, there is in its favor a mass of clinical evidence."—*London Medical Record.*

"There is no scarcity of good alimentary articles, but there is an objection to most of them that they will not keep. This makes our estimate of Trommer's Extract of Malt higher each season. It will keep in the hottest climate."—*N. C. Medical Journal, Wilmington.*

* LIST OF PREPARATIONS

MANUFACTURED BY

THE TROMMER EXTRACT OF MALT CO.

Commended by the most eminent Physiologists, Chemists and Physicians of all Countries, as:

Doctors FRESenius, IMMERMANn, NIEMEYER, OPPOLZER, WERBER, BOCK, HOPPE-SEYLER, HEIMERDINGER, JUERGENSEN, SCHROEDER and ZIEMSSSEN, *in Germany*; TROUSSEAU, GOSSELIN, HARDY, MAUDUIT and PILLOIS, *in France*; RAMAGALIA, TESTA and TARTAGLIA, *in Italy*; AITKEN, ANSTIE, RICHARDSON, FOTHERGILL, ROBERTS, CHAMBERS and THOMPSON, *in England*; LARRABEE, PALMER, CHAPMAN, PEPPER, WYMAN, COWLING, WEBBER, SCHAUFFLER, MARVIN, DOUGLAS, DUNSTER, CALDWELL, GRIFFITH, MORTON, HUGHES, LÆWENSTEIN, DARLING, BYRD, BARRET, BRIDGE, ADOLPHUS, AUSTIN and BUIST, *in the United States*; LACHAPELLE, MALLOCH, GRANT, MCCONNELL, KENNEDY, MARSDEN and MITCHELL, *in Canada*.

	RETAIL PRICE.
EXTRACT OF MALT WITH HOPS (PLAIN.), - - - - -	\$1.00 per Pint Bottle.
EXTRACT OF MALT, FERRATED, - - - - -	\$1.00 per Pint Bottle.
A tablespoonful contains:	
Pyrophosphate of Iron, - - - - -	4 grains.
EXTRACT OF MALT WITH COD LIVER OIL, - - - - -	\$1.00 per Pint Bottle.
A palatable, stable, and efficient combination, consisting of 60 per cent. of Extract of Malt and 40 per cent. of Norwegian Cod Liver Oil.	
EXTRACT OF MALT WITH COD LIVER OIL AND HYPOPHOSPHITES, - - - - -	\$1.00 per Pint Bottle.
Unequalled by any of the "Emulsions" of Cod Liver Oil, because more Stable, more Palatable, more Nutritious, and possessing Diastasic and Peptogenic properties.	
A tablespoonful contains:	
Extract of Malt, - - - - -	60 per cent.
Norwegian Cod Liver Oil, - - - - -	40 per cent.
Hypophosphite of Lime, - - - - -	2½ grains.
Hypophosphite of Soda, - - - - -	1½ grains.
EXTRACT OF MALT WITH COD LIVER OIL AND IODIDE OF IRON, - - - - -	\$1.00 per Pint Bottle.
A tablespoonful contains:	
Extract of Malt, - - - - -	60 per cent.
Norwegian Cod Liver Oil, - - - - -	40 per cent.
Iodide of Iron, - - - - -	1 grain.
EXTRACT OF MALT WITH PEPSIN, - - - - -	\$1.00 per Pint Bottle.
A tablespoonful contains:	
Pepsin (equivalent of saccharated,) - - - - -	20 grains.
Hydrochloric Acid, - - - - -	2½ minims.
EXTRACT OF MALT WITH ALTERATIVES, - - - - -	\$1.00 per Pint Bottle.
A tablespoonful contains:	
Chloride of Calcium, - - - - -	10 grains.
Iodide of Calcium, - - - - -	¼ grain.
Iodide of Iron, - - - - -	¼ grain.
Bromide of Sodium, - - - - -	2 grains.
EXTRACT OF MALT WITH HYPOPHOSPHITES, - - - - -	\$1.00 per Pint Bottle.
A tablespoonful contains:	
Hypophosphite of Lime, - - - - -	2 grains.
Hypophosphite of Soda, - - - - -	1½ grains.
EXTRACT OF MALT WITH CITRATE OF IRON AND QUINIA, - - - - -	\$1.00 per Pint Bottle.
(Citrate of Iron and Quinia U. S. P. 1882.)	
A tablespoonful contains:	
Citrate of Iron and Quinia, - - - - -	4 grains.
EXTRACT OF MALT WITH IODIDES, - - - - -	\$1.00 per Pint Bottle.
A tablespoonful contains:	
Iodide of Manganese, - - - - -	1 grain.
Iodide of Iron, - - - - -	1 grain.
EXTRACT OF MALT FOR INFANTS AND CHILDREN, (8 oz. Bottles), - - - - -	50 Cents per Bottle.
A Pure Extract of Malt without Hops.	
TROMMER'S DIASTASIC FOOD FOR INFANTS AND INVALIDS, - - - - -	50 Cents per Pound Can.
Containing peptonized nitrogenous elements, carbohydrates, in form ready for absorption, and salts, all derived from grain, and forming, in connection with milk and water, or with water alone, a convenient and excellent nourishing food for infants and invalids.	

† The originators and manufacturers of Trommer's Extract of Malt and Diastasic Food are practicing physicians and chemists. They consequently have kept in view the adaptation of these preparations to practical therapeutics. In the course of correspondence with physicians extending through a series of years they have received much useful information and many valuable suggestions which are thankfully acknowledged. They are ever ready to respond to all inquiries relating to these preparations and their appropriate uses.

TROMMER'S (DIASTASIC) FOOD.

THIS FOOD possesses Digestive Properties, and when combined with Fresh Milk, forms an aliment more nearly like Mother's Milk than any other prepared food. It is an unequaled nourishment for young children and sick persons, being a Normal Food, containing in due proportion all the elements required for the growth and repair of the body, viz.: Soluble Albuminoids, Soluble Carbohydrates, and Salines.

Sample package sent to physicians free of expense.

70 West Cedar St., BOSTON, MASS., June 3, 1889.

The specimen of Trommer's Diastasic Food, which I received from you, merits my approval. I used part of it in making an analysis, which showed that this Food has indeed superior advantages. In all cases where I have administered it to *infants* the results have been very satisfactory, and the same may be said regarding *adult* invalids. In my hands I have proved that both by analysis and actual use Trommer's Food is just what you claim for it. I have perfect confidence in it and I believe it to be a most excellent preparation.

Yours Respectfully,

W. ALLEN HUBBARD, M. D.

AMBIA, IND., June 3, 1889.

I have used considerable of your Diastasic Food during the past year and find it very useful in *digestive* trouble of children.

Yours &c.,

A. D. HARD, M. D.

FARMVILLE, TENN., June 21, 1889.

I gave the Food you kindly sent me to a lady patient who had been a great sufferer from Neurasthenia and Indigestion. She became prostrated by fever, and not being able to digest even milk, it became evident that something must be done to support her till she could tide the crisis or she must die. I gave her the Diastasic Food, and although she could take very little of it at a time, yet she was soon improving and in a few days her stomach was able to digest milk and bread. I am well pleased with the Food.

Respectfully,

M. P. BOYD, M. D.

405 N. 5th St., SPRINGFIELD, ILLS., June 7, 1889.

Have recommended the Trommer's Diastasic Food last summer more than any other Food, and found it usually acceptable to my little patients and preferred by their parents. Shall make use of it the coming summer again freely.

C. F. KUECHLER, M. D.

